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Number of pages including this page: 6

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MESSAGE:

DRAFT CLAIMS FOR POSSIBLE EXAMINER'S AMENDMENT. PLEASE CALL IF QUESTIONS, OR TO CONFIRM THESE ARE ~~WOULD BE~~ ACCEPTABLE.

JPP/klf

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APPLICANT: Vaughan Morrill, Jr., et al.
Appl. No.: 10/591,211
FILING DATE: August 31, 2006
Examiner: Erin Lynn Snelting
Art Unit: 1791
Confirmation No.: 1435
Docket No.: QUQU 8303W1

FOR: METHOD AND DEVICE FOR CONTINUOUSLY FORMING OPTICAL FIBER CONNECTOR GLASS AND OTHER CLOSE TOLERANCE COMPONENTS

CLAIMS

Please amend the claims as indicated below:

1-10. (canceled).

11. (previously presented) A method of making a high-precision glass tube comprising

a step of providing a heating chamber, the heating chamber having a single inlet, a single outlet, and a hollow inner forming tube extending from the vicinity of the outlet, within an inside dimension of the outlet, through a gland in a wall of the chamber,

a step of pushing a solid glass rod into the inlet, the inlet comprising a heated cone having a diameter less than the diameter of the solid glass rod, the cone melting the exterior of the rod and forming a molten glass seal at the inlet,

a step of pulling a tube from the outlet, and

a step of controlling the dimensions of the tube, said step of controlling the dimensions of the tube comprising controlling the rate at which the glass rod is pushed into the inlet by means of a feedback system.

12-13. (canceled).

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14. (previously presented) The method of claim 11 wherein the rod has a diameter which varies at least 0.5% and no more than 5%.

15. (previously presented) The method of claim 11 wherein the inlet has a diameter 0.5% to 5% smaller than the smallest diameter of the rod.

16-63 (canceled).

64. (previously presented) The method of claim 11 wherein the rod is substantially horizontal as it enters the heating chamber and the tube is substantially horizontal as it exits the heating chamber.

65. (currently amended) The method of claim 64 ~~wherein the rod is pushed into the inlet at a controlled speed, the method~~ further comprising a step of determining changes in the diameter of the ~~rod, and a step of controlling the speed of feeding the rod in response to changes in the diameter of the~~ rod.

66. (canceled).

67. (previously presented) The method of claim 11 wherein the step of pushing a solid glass rod into the inlet comprises feeding the rod into the inlet with sufficient force to produce a pressure in the chamber which suppresses formation of air bubbles or air channels in the glass in the chamber.

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68. (currently amended) A method of continuously making a glass tube free of airlines in the tube wall, the method comprising

providing a heating chamber, the heating chamber having a single inlet, a single outlet, and a hollow inner forming tube extending from the vicinity of the outlet, within an inside dimension of the outlet, through a gland in a wall of the chamber, the heating chamber being filled with molten glass and being substantially free of gas,

a step of pushing a horizontal solid glass rod into the inlet, ~~and~~

a step of pulling a horizontal tube from the outlet, and

a step of controlling the dimensions of the tube, said step of controlling the dimensions of the tube comprising controlling the rate at which the glass rod is pushed into the inlet by means of a feedback system,

wherein the inlet comprises a heated cone having a diameter less than the diameter of the solid glass rod, the cone melting the exterior of the rod and forming a molten glass seal at the inlet, and

wherein the step of pushing a horizontal solid glass rod into the inlet of the chamber is with sufficient force to produce a pressure in the chamber which suppresses formation of air bubbles or air channels in the glass in the chamber.

69. (previously presented) The method of claim 68 wherein the solid glass is fed at a force of above about five kilograms.

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70. (currently amended) A method of making a high precision glass tube having tolerances for outside diameter, inside diameter, roundness, wall thickness and axial center of inside diameter in relation to the outside diameter of less than one hundred nanometers, the method comprising a step of providing a heating chamber, the heating chamber having a single inlet, a single outlet, and a hollow inner forming tube extending from the vicinity of the outlet, within an inside dimension of the outlet, through a gland in a wall of the chamber, a step of pushing a solid glass rod substantially horizontally into the inlet at a controlled speed, the inlet comprising a heated cone having a diameter less than the diameter of the solid glass rod, the cone melting the exterior of the rod and forming a molten glass seal at the inlet, ~~and~~ a step of pulling a tube from the outlet substantially horizontally at a controlled speed, and a step of controlling the dimensions of the tube, said step of controlling the dimensions of the tube comprising controlling the rate at which the glass rod is pushed into the inlet by means of a feedback system.

71. (previously presented) The method of claim 70 wherein the rod has a diameter which varies at least 0.5% and no more than 5%.

72. (previously presented) The method of claim 70 wherein the cone has a smallest diameter 0.5% to 5% smaller than the smallest diameter of the rod.

73. (canceled).

74. (currently amended) The method of claim ~~73~~ 70 wherein the ~~control~~ feedback system utilizes a sensed temperature at said inlet as an indication of variations in the diameter of said rod.

75. (currently amended) The method of claim ~~73~~ 70 wherein the ~~control~~ feedback system utilizes a sensed dimension of said tube.

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REMARKS

Claims cancelled and amended without prejudice to applicant's right to file continuation application(s) directed to the subject matter of the claims as previously presented.

Applicant and his attorney thank the Examiner for her telephone call suggesting amendment along the lines of the foregoing, and she is authorized to make the amendments by examiner's amendment. Please call if these amendments do not place the case in condition for allowance, or if different wording seems more appropriate.

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